

Arizona Health Care Cost Containment System



ARIZONA LONG TERM CARE SYSTEM (ALTCS) CLINICAL QUALITY PERFORMANCE INDICATORS FOR DIABETES CARE

For the Measurement Period Ending September 30, 2002

Produced by the Division of Health Care Management, AHCCCS

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Arizona Long Term Care System (ALTCS)
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Arizona Long Term Care System (ALTCS)
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EXECUTIVE SUMMARY

Diabetes is the sixth leading cause of death among Americans. The United States Department of Health and Human Services (DHHS) estimates that almost 17 million Americans age 20 years and older have diabetes.^{1,2}

Direct and indirect costs associated with diabetes in the United States, including lost productivity, were estimated to be \$132 billion in 2002.³ Diabetes is the leading cause of end-stage kidney disease, lower extremity amputations, and new cases of blindness among U.S. adults ages 20 to 74 years.⁴ The prevalence of diabetes is higher among American Hispanics, blacks and American Indians/Alaska natives, compared with non-Hispanic whites. The prevalence of diabetes also is higher among older Americans.¹ About 20 percent of all people 65 and older have diabetes, compared with approximately 6 percent of the total population.¹

The potential impact of this disease on the Arizona Long Term Care System (ALTCS) is of significant concern to AHCCCS. Based on this and previous studies conducted by AHCCCS, the prevalence of diabetes among ALTCS members is approximately 20 percent. With the number of Arizonans age 65 and older increasing 40 percent in the last decade, the proportion of ALTCS members with diabetes is likely to increase as well.⁵

Most ALTCS members are covered by Medicare and may seek services outside AHCCCS provider networks (at the end of the measurement period for this report, 81 percent of ALTCS elderly and physically disabled members were “dually enrolled”). Because Medicare is the primary payer for these beneficiaries, AHCCCS has not been able to determine to what extent these members receive services. However, through a collaborative project with Health Services Advisory Group (HSAG), a Quality Improvement Organization (QIO) contracted with the federal government, AHCCCS received some data on diabetes care provided to members who were covered by both Medicare and AHCCCS (Medicaid). Medicare data for members receiving care on a fee-for-service basis was obtained by HSAG from the Centers for Medicare and Medicaid Services (CMS).

AHCCCS used Health Plan Employer Data and Information Set (HEDIS®) 2002 specifications as a guideline for measurement of diabetes care services. This report includes results for two indicators, Hb A_{1c} testing and lipid profiles. AHCCCS had planned to report data for retinal exams among ALTCS members with diabetes, but that information was not available from CMS.

This study measured services provided from October 1, 2001, through September 30, 2002. Three rates for each indicator were calculated: for members enrolled in AHCCCS through Medicaid only, for members enrolled in AHCCCS who also were eligible for Medicare (dually enrolled), and a combined rate of the two groups.

Overall results will be used to establish baseline rates for diabetes-care indicators and develop new minimum performance standards and goals for care of ALTCS members with diabetes. These standards will be used to evaluate performance of AHCCCS Contractors that serve members enrolled in ALTCS.

This study included 2,127 ALTCS elderly and physically disabled (EPD) members who were diagnosed with type 1 or type 2 diabetes, were 18 through 75 years of age, and were continuously enrolled with one ALTCS Contractor for the entire measurement period (one gap in enrollment, not exceeding 31 days, was allowed). The rates reported below were derived from combined AHCCCS and CMS data, which includes services provided through ALTCS Contractors and through the Medicare fee-for-service program.

Hb A_{1c} testing - This indicator measured the percentage of AHCCCS members who had one or more glycosylated hemoglobin, or Hb A_{1c}, tests during the measurement period.

Findings

- The overall rate of ALTCS members with diabetes (including Medicaid-only members and those who were dually enrolled) who received an Hb A_{1c} test was 47.3 percent.
- Rates by Contractor ranged from 35.5 percent to 66.7 percent.
- Pearson's Chi-square revealed no difference in the rate of annual Hb A_{1c} testing between members enrolled only in Medicaid and dually enrolled members.
- Four of seven Contractors exceeded the DHHS national Healthy People 2010 goal that 50 percent of adults with diabetes have an Hb A_{1c} measurement at least once a year.⁶

Lipid (LDL) screening - This indicator measured the percentage of AHCCCS members who had one or more fasting lipid profiles performed during the measurement period or the preceding year.

Findings

- The overall rate of ALTCS members with diabetes (including both Medicaid-only members and those who were dually enrolled) who had a lipid screening during the measurement period or the preceding year was 43.4 percent.
- Rates by Contractor ranged from 33.2 percent to 56.4 percent.
- Pearson's Chi-square revealed that, overall, there was no difference in the rate of lipid screening between members enrolled only in Medicaid and dually enrolled members.
- DHHS has not set an objective for biennial lipid profiles.

It should be emphasized that Medicare data for dually enrolled ALTCS members obtained from CMS reflects only encounters paid for on a fee-for-services basis, and does not include services provided to members who are enrolled in managed care plans that contract with Medicare (known as Medicare + Choice plans). These health plans serve nearly 30 percent of all Medicare beneficiaries in Arizona,⁷ and AHCCCS data shows that about one-quarter of ALTCS EPD members were enrolled in Medicare + Choice plans during the measurement period. Thus, rates for the two diabetes indicators reported here may not fully reflect the extent to which ALTCS members receive diabetes-related preventive-care services. AHCCCS will consider ways to obtain additional data from Medicare managed-care plans in the future.

In order to assist ALTCS Contractors with quality improvement efforts, AHCCCS has compiled information on barriers to effective diabetes management and successful strategies for increasing the use of preventive-care practices. It is hoped that the following discussion will assist Contractors in evaluating and refining existing diabetes-management efforts or, if necessary, developing new interventions.

Because diabetes is frequently an asymptomatic disease, patients may not adhere to treatment regimens or regular blood-glucose or lipid testing.⁸ Patients' socioeconomic status also may pose a barrier to use of preventive-care services. Lower levels of education are associated with patients not adhering to recommendations for diabetes self management. This likely is related to a lack of understandable or relevant patient education materials.^{9,10}

Physicians face barriers in ensuring that patients receive these services and have adequately controlled glucose and lipid levels. Common physician barriers include confusion caused by differing recommendations regarding testing and treatment, the need for frequent monitoring and medication adjustments to achieve treatment goals, and time limitations.^{8,10}

Rates of Hb A_{1c} and lipid testing can be improved by interventions such as easy-to-understand and culturally relevant patient education materials, computer-generated patient reminders or automated telephone disease-management systems with nurse follow up, chronic disease self-management education programs, social support networks, and case management services.¹⁰⁻¹⁶ With more than half of ALTCS members living in home- and community-based settings, these strategies may be especially useful in helping Contractors and providers to better manage the care of those diabetics.

Even for those patients in whom the disease has progressed and adversely affects one or more body systems, causing such comorbid conditions as kidney or heart disease, these interventions may improve outcomes. Regular monitoring of blood-glucose and lipid levels allows health care providers to take steps that can reduce the impact of the disease and improve quality of life. The Chronic Care Model, developed by a national program of the Robert Wood Johnson Foundation, may be a useful tool for health care systems, managed care organizations and collaborative initiatives to improve the care of people with diabetes.¹⁷

AHCCCS will provide individual results to Contractors and will continue to work with ALTCS Contractors to help them improve performance in these indicators. As noted, AHCCCS contractual Minimum Performance Standards will be developed from the baseline rates for these indicators. In the future, Contractors who do not meet these standards may be required to implement corrective action plans and may face sanctions if they fail to show improvement in their rates.

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BACKGROUND

Diabetes is the sixth leading cause of death among Americans, and was a direct or contributing cause of more than 209,000 deaths in 1999 (the most recent year for which comprehensive national data is available).^{1,2} In Arizona, diabetes was the seventh leading cause of death in 1999.³ More recent data indicates that diabetes continues to affect a significant portion of the population. The United States Department of Health and Human Services (DHHS) estimates that almost 17 million Americans age 20 years and older have diabetes, with about one third of these cases undiagnosed.^{1,2}

Diabetes is a chronic disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert carbohydrates into glucose, a simple sugar that is a primary energy source. Both genetics and lifestyle, such as obesity and lack of exercise, are associated with the disease.⁴

There are three major types of diabetes:^{4,5}

- Type 1 diabetes, which results from the body's failure to produce insulin and affects 10 to 15 percent of all diabetics. Type 1 diabetes most commonly develops in childhood or adolescence.
- Type 2 diabetes, which results from insulin resistance, a condition in which the body fails to use insulin properly, and affects 85 to 90 percent of diabetics. Type 2 diabetes is usually diagnosed in people 30 years or older.
- Gestational diabetes, a form of glucose intolerance that is diagnosed in about 4 percent of women during pregnancy. Gestational diabetes may be manifested later as type 2 diabetes.

Direct and indirect costs associated with diabetes in the United States, including lost productivity, were estimated to be \$132 billion in 2002.⁶ Diabetes is the leading cause of end-stage kidney disease, lower extremity amputations, and new cases of blindness among U.S. adults ages 20 to 74 years.⁷ Other complications of diabetes include heart disease, stroke, high blood pressure, nervous system damage, and dental disease. People with diabetes have a two- to four-fold increase in their risk of heart disease and stroke, compared with the general population. People with diabetes also are more susceptible to many other illnesses, and are more likely to die from pneumonia or influenza than people who do not have diabetes.¹

The prevalence of diabetes is higher among American Hispanics, blacks and American Indians/Alaska natives, compared with non-Hispanic whites.⁸ The prevalence of diabetes also is higher among older Americans: approximately half of all diabetes cases occur in people older than 55. About 20 percent of all people 65 and older have diabetes, compared with approximately 6 percent of the total population.^{1,9}

The potential impact of this disease on the Arizona Long Term Care System (ALTCS) is of significant concern to AHCCCS. Based on this and previous studies conducted by AHCCCS, the prevalence of diabetes among ALTCS members is approximately 20 percent. With the number of Arizonans age 65 and older increasing 40 percent in the last decade, the proportion of ALTCS members with diabetes is likely to increase as well. The complications of diabetes can affect the ability of many elderly and physically disabled (EPD) members enrolled in ALTCS to remain in their homes or a less intensive community-based care setting. This in turn, impacts costs. ALTCS members account for approximately 4 percent of AHCCCS enrollees, yet the cost to care for these members is approximately 21 percent of all AHCCCS expenditures.⁹

Most ALTCS members are covered by Medicare and may seek services outside AHCCCS provider networks (at the end of the measurement period for this report, 81 percent of ALTCS EPD members were “dually enrolled”). Because Medicare is the primary payer for these beneficiaries, AHCCCS has not been able to determine to what extent these members receive services. However, through a collaborative project with Health Services Advisory Group (HSAG), a Quality Improvement Organization (QIO) contracted with the federal government, AHCCCS received some data on diabetes care provided to members who were covered by both Medicare and AHCCCS (Medicaid). Medicare data for members receiving care on a fee-for-service basis was obtained by HSAG from the Centers for Medicare and Medicaid Services (CMS).

PREVENTION OF DIABETES COMPLICATIONS

Control of hyperglycemia (increased blood sugar) is critical to preventing or minimizing complications of diabetes. Sustained high blood sugars result in damage to the retina, peripheral nerves and kidneys. As with many diseases, other conditions (known as comorbid conditions) may be present with diabetes. For example, the increased prevalence of lipid abnormalities found with type 2 diabetes contributes to higher rates of cardiovascular disease among diabetics. Thus, monitoring of blood-glucose levels and lipids are effective in reducing both the incidence and progression of diabetes complications.

Physicians utilize a glycosylated hemoglobin, or Hb A_{1c}, test to monitor patients' blood glucose levels. This test provides an indication of a person's average glucose levels over a two- to three-month period by measuring the amount of glucose that has bonded with hemoglobin in the body's red blood cells.¹⁰ Studies in the United States and abroad have shown that improved glycemic control benefits people with either type 1 or type 2 diabetes.^{1,10} The United Kingdom Prospective Diabetes Study found that, for every percentage point decrease in Hb A_{1c}, there was a 35-percent reduction in the risk of developing microvascular complications, which affect the eyes and kidneys.¹¹

According to the American Diabetes Association (ADA), an Hb A_{1c} test should be performed twice a year in patients who have achieved glycemic control, and quarterly in patients whose therapy has changed or who are not meeting glycemic goals.¹¹

Lipid Management

Managing lipid levels has been shown to reduce macrovascular disease – or complications affecting the heart, brain and legs – in people with type 2 diabetes, especially those who have a history of cardiovascular problems.¹¹ Control of cholesterol and lipids can reduce cardiovascular complications by 20 to 50 percent.¹ A fasting lipid profile is performed to measure total cholesterol (TC), high-density lipoproteins (HDL) and triglycerides. These results are used to calculate and manage low-density lipoprotein (LDL) levels.

The ADA recommends testing for lipid disorders at least annually. In adults who achieve certain goals for lipid levels, repeat testing can be performed every two years.¹¹

Eye Care

Retinal damage, or retinopathy, is a frequent complication of both type 1 and type 2 diabetes. Regular eye examinations by an ophthalmologist or optometrist are necessary for the early detection and treatment of retinopathy to prevent vision loss. It is estimated that regular eye exams and timely treatment, including laser surgery, could prevent up to 90 percent of diabetes-related cases of blindness.¹¹

The ADA recommends that people with type 1 and type 2 diabetes have a comprehensive dilated eye exam annually, or more frequently if retinopathy is progressing.¹²

Despite the benefits of services that may prevent or reduce complications of diabetes, many people do not receive this care. According to the Centers for Disease Control and Prevention (CDC), levels of preventive-care practices among persons with diabetes are lower than national health objectives. Using the Behavioral Risk Factor Surveillance System (BRFSS), a national telephone survey of adults conducted by state health departments, the CDC found that only 24 percent of adults surveyed received an annual Hb A_{1c} test in the years 1997 to 1999. The rate of annual Hb A_{1c} testing in Arizona during that period was reported to be about 21 percent. The BRFSS also found the rate of annual dilated eye exams to be 60 percent, both nationally and in Arizona. The BRFSS did not measure fasting lipid profiles.¹³

QUALITY INDICATORS

AHCCCS used the Health Plan Employer Data and Information Set (HEDIS®) 2002, which was developed by the National Committee for Quality Assurance (NCQA), as a guideline for measurement of diabetes care services.* HEDIS methodology includes six quality indicators of performance related to diabetes. AHCCCS identified three indicators for measurement in 2003: Hb A_{1c} testing, fasting lipid profiles, and dilated eye exams.

* It should be noted that the HEDIS indicators are based on clinical criteria, but should not be considered as treatment guidelines. Thus, HEDIS specifications differ from ADA recommendations for frequency of testing.

This report includes results for two indicators, Hb A_{1c} testing and lipid profiles; Medicare data for the third indicator, dilated eye exams, was not available from CMS.

1) **Hb A_{1c} testing**

This indicator measured the percentage of ALTCS EPD members who:

- were diagnosed with type 1 or type 2 diabetes,
- were 18 through 75 years of age at the end of the measurement period,
- were continuously enrolled with one ALTCS Contractor for the entire measurement period (one gap in enrollment, not exceeding 31 days, was allowed), and
- had one or more Hb A_{1c} tests during the measurement period.

2) **Lipid (LDL) screening**

This indicator measured the percentage of ALTCS EPD members who:

- were diagnosed with type 1 or type 2 diabetes,
- were 18 through 75 years of age at the end of the measurement period,
- were continuously enrolled with one ALTCS Contractor for the entire measurement period (one gap in enrollment, not exceeding 31 days, was allowed), and
- had one or more fasting lipid profiles performed during the measurement period or the preceding year.

Three rates for each of the above indicators were calculated: for members enrolled in AHCCCS through Medicaid only, for members enrolled in AHCCCS who also were eligible for Medicare (dually enrolled), and a combined rate of the two groups.

MEASUREMENT PERIOD

The measurement period for this study was October 1, 2001, through September 30, 2002.

INDICATOR GOALS

As part of its “Healthy People 2010” objectives, the U.S. Department of Health and Human Services (DHHS) has established a goal that 50 percent of adults with diabetes have an Hb A_{1c} measurement at least once a year.¹⁴ DHHS has not set an objective for biennial lipid profiles.

This study will establish baseline rates for diabetes-care indicators, and will be used to develop new minimum performance standards and goals for care of ALTCS members with diabetes. These standards will be used to evaluate performance of AHCCCS Contractors that serve members enrolled in ALTCS.

RESULTS AND ANALYSIS

This study included 2,127 ALTCS EPD members with diabetes. The rates reported below were derived from combined AHCCCS and CMS data, which includes services provided through ALTCS Contractors and through the Medicare fee-for-service program.

1) **Hb A_{1c} testing**

The overall rate of ALTCS members with diabetes who received an Hb A_{1c} test during the measurement period was 47.3 percent (Table 1). Rates by Contractor ranged from 35.5 percent to 66.7 percent. Four Contractors exceeded the Healthy People 2010 goal (Figure 1).

Data analysis using Pearson's Chi-square revealed that, overall, there was no difference in the rate of Hb A_{1c} testing between members enrolled only in Medicaid and those who were dually enrolled ($p=.577$), with rates of 48.4 percent and 47.0 percent, respectively.

2) **Lipid (LDL) screening**

The overall rate of ALTCS members who had a fasting lipid profile during the measurement period or the preceding year was 43.4 percent (Table 2). Rates by Contractor ranged from 33.2 percent to 56.4 percent (Figure 2). As noted, there is no comparable Healthy People goal for lipid testing of diabetics.

Pearson's Chi-square also revealed that there was no difference overall in the rate of lipid screening between members enrolled only in Medicaid and those who were dually enrolled ($p=.430$), with rates of 42.0 percent and 43.9 percent, respectively.

COMPARISONS WITH OTHER STUDIES

This study cannot be compared directly to other reports of utilization of diabetes services. Because of differences in methodology, the performance indicator rates reported here are not comparable to those reported by AHCCCS in prior years. For example, previous performance indicator studies measured whether Hb A_{1c} testing was performed twice a year, rather than annually, and was based only on AHCCCS encounter data.

It should be noted that AHCCCS measured annual Hb A_{1c} testing among members with diabetes who were continuously enrolled with all Contractors in the period from October 1, 2000, through September 30, 2001, as part of a Quality Improvement Project (QIP). The QIP baseline measure showed an overall rate among ALTCS Contractors of 60.2 percent. The disparity in rates reported in these two studies likely reflects the difference in data sources: the QIP baseline data was collected from encounter (claims) information, along with laboratory and medical records, and data for this report was extracted solely from AHCCCS and CMS encounter data.

NCQA has reported national averages for Medicaid managed-care plans for its HEDIS diabetes measures. In 2000, the Medicaid rates were 68.5 percent for annual Hb A_{1c} testing and 59.6 percent for biennial lipid screening.¹⁵ While the NCQA measure is not specific to a long-term-care population, these rates may be useful in establishing AHCCCS goals for improvement.

DISCUSSION

Medicare data obtained from CMS reflects only encounters paid for on a fee-for-services basis, and does not include services provided to members who are enrolled in managed care plans that contract with Medicare (known as Medicare + Choice plans). These health plans serve about 12 percent of the total Medicare population nationwide and nearly 30 percent of all Medicare beneficiaries in Arizona.^{16,17} AHCCCS data shows that approximately one-quarter of ALTCS EPD members were enrolled in Medicare + Choice plans during the measurement period. Thus, rates for the two diabetes indicators reported here may not fully reflect the extent to which ALTCS members receive diabetes-related preventive-care services. AHCCCS will consider possible ways to obtain data from Medicare managed-care plans in the future. AHCCCS also will continue to attempt to obtain data on retinal exams from CMS, in order to ensure use of that important service.

In order to assist ALTCS Contractors with quality improvement efforts, AHCCCS has compiled information on barriers to effective diabetes management and successful strategies for increasing the use of preventive-care practices. It is hoped that the following discussion will assist Contractors in evaluating and refining existing diabetes-management efforts or, if necessary, developing new interventions.

Barriers to Effective Diabetes Management

Health care providers state that diabetes is difficult to treat because of the involvement of many body systems, requiring patients to adhere to daily and sometimes complex interventions to control the disease.¹⁸ For people with type 2 diabetes, control of blood glucose involves following a careful diet and exercise program, losing excess weight, and taking insulin and/or oral medication. Many people with diabetes also need to take medications to control related conditions such as elevated cholesterol and high blood pressure. Patients often face difficulty in altering their lifestyles to accommodate all these measures. This may be especially true of people who are elderly and physically disabled.

Because diabetes is frequently an asymptomatic disease, patients may not adhere to treatment regimens or regular blood-glucose testing.¹⁸ Patients' socioeconomic status also may pose a barrier to use of preventive-care services. Lower levels of education are associated with patients not adhering to recommendations for diabetes self management. This likely is related to a lack of understandable or relevant patient education materials.^{19,20}

Physicians also face barriers in ensuring that patients receive preventive-care services and have adequately controlled glucose levels. Common physician barriers include confusion caused by differing recommendations regarding testing and treatment, the need for frequent monitoring and medication adjustments to achieve treatment goals, and time limitations.^{18,20}

Strategies to Improve Diabetes Care

Patient adherence to testing and treatment regimens can be improved by interventions such as: easy-to-understand patient education materials, automated patient reminders by telephone, social support networks that include lifestyle-management education, and nurse follow-up or case management services.²⁰⁻²⁶ With more than half of ALTCS members living in home- and community-based settings, these strategies may be especially useful in helping Contractors and providers to better manage the care of those diabetics. And, because of the increased prevalence of diabetes among certain racial or ethnic groups, any intervention must take into account the cultural values, beliefs and practices of those patients.

Specific physician- and practice-related interventions that have proven to be successful in managing diabetic patients in a community setting include:^{11,22,23}

- Practice guidelines, adopted with participation of providers in the process. Guidelines should be readily accessible at the point of service, such as on patient charts, in examining rooms or on office computer systems
- Automated reminders of patients due for testing or specific identification by health plans of patients with abnormal laboratory values
- Flow sheets, used by providers to track Hb A_{1c} levels and other test results
- Practice changes, such as scheduling dedicated diabetes visits and group or “cluster” visits
- Increased availability and involvement of expert consultants, such as endocrinologists and diabetes educators

For those patients in whom the disease has progressed and adversely affects one or more body systems, causing such comorbid conditions as kidney or heart disease, these interventions also may improve outcomes. Regular monitoring of blood-glucose and lipid levels allows health care providers to take steps that can reduce the impact of the disease and improve quality of life. The Chronic Care Model, developed by a national program of the Robert Wood Johnson Foundation, may be a useful tool for health care systems, managed care organizations and collaborative initiatives to improve the care of people with diabetes.²⁷

Local Quality Improvement Initiatives

Through initiatives such as the Arizona State Diabetes Collaborative and the Arizona Diabetes Initiative, a broad array of public agencies, private companies and professional associations have joined together to improve the health and medical care of persons with diabetes. Using the Chronic Care Model, the Arizona Diabetes Initiative has organized workgroups to develop and implement interventions related to each of the model’s components. The interventions include proven strategies mentioned above, such as a diabetes flow sheet for provider use and a “Passport to Better Diabetes Health” for patients to use in keeping track of tests and immunizations, and implementation of an Adult Preventive Health Disease Registry to track patients with chronic disease, including those with diabetes. Several AHCCCS Contractors are participating in this initiative.

Several Contractors have implemented quality improvement activities for better rates of diabetes-management services. For example, one ALTCS Contractor serving a rural county determined that approximately one-third of its members have diabetes. The health plan has hosted dinner programs for clinicians on diabetes topics that offer continuing education credits. It also has developed a “Diabetes Expectation Card” that urges diabetic members to ask their doctors for a hemoglobin A1c test and other preventive tests and exams. The card, printed in both English and Spanish, is being distributed by the Contractor’s case managers, along with a teaching guide/sample script and diabetes information materials to support one-on-one patient education.

AHCCCS will provide individual results to Contractors and will continue to work with ALTCS Contractors to help them improve performance in these indicators. As noted, AHCCCS contractual Minimum Performance Standards will be developed from the baseline rates for these indicators. In the future, Contractors who do not meet these standards may be required to implement corrective action plans and may face sanctions if they fail to show improvement in their rates.

VIII. REFERENCES

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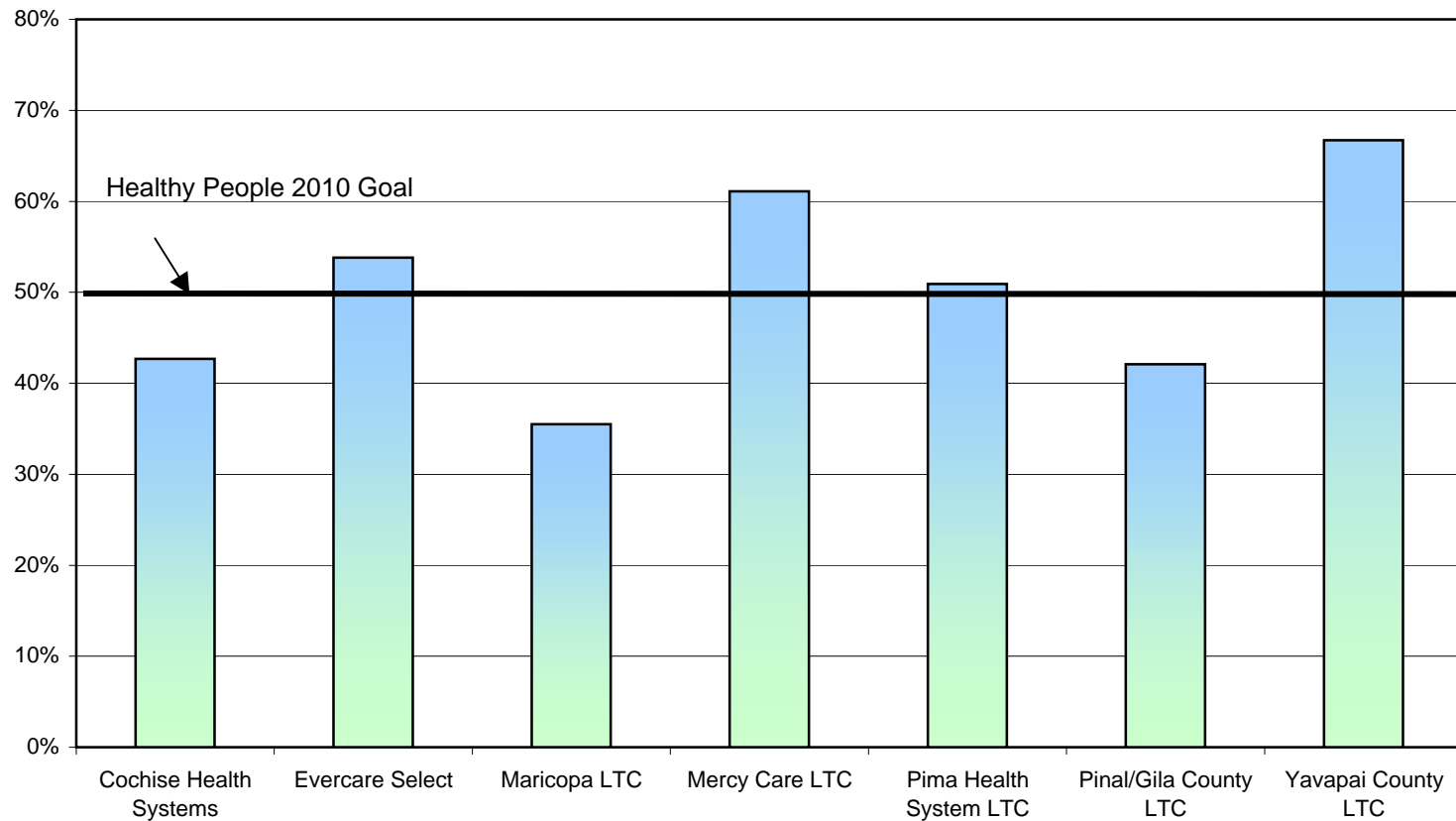
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Table 1
Arizona Health Care Cost Containment System/Arizona Long Term Care System
ANNUAL Hb A1c TESTING BY CONTRACTOR (1)
Measurement Period: October 1, 2001, through September 30, 2002

Contractor	Number of Members	Number of Members with Hb A1c Tests	Percent of Members with Hb A1c Tests
Cochise Health Systems	117	50	42.7%
Evercare Select	277	149	53.8%
Maricopa LTC	753	267	35.5%
Mercy Care LTC	393	240	61.1%
Pima Health System LTC	395	201	50.9%
Pinal/Gila County LTC	114	48	42.1%
Yavapai County LTC	78	52	66.7%
TOTAL	2127	1007	47.3%

(1) Rates are based on a combination of AHCCCS encounter data and Medicare fee-for-service data obtained from the Centers for Medicare and Medicaid Services.

Figure 1
Arizona Health Care Cost Containment System/Arizona Long Term Care System
ANNUAL Hb A1c TESTING BY CONTRACTOR (1)
Measurement Period: October 1, 2001, through September 30, 2002



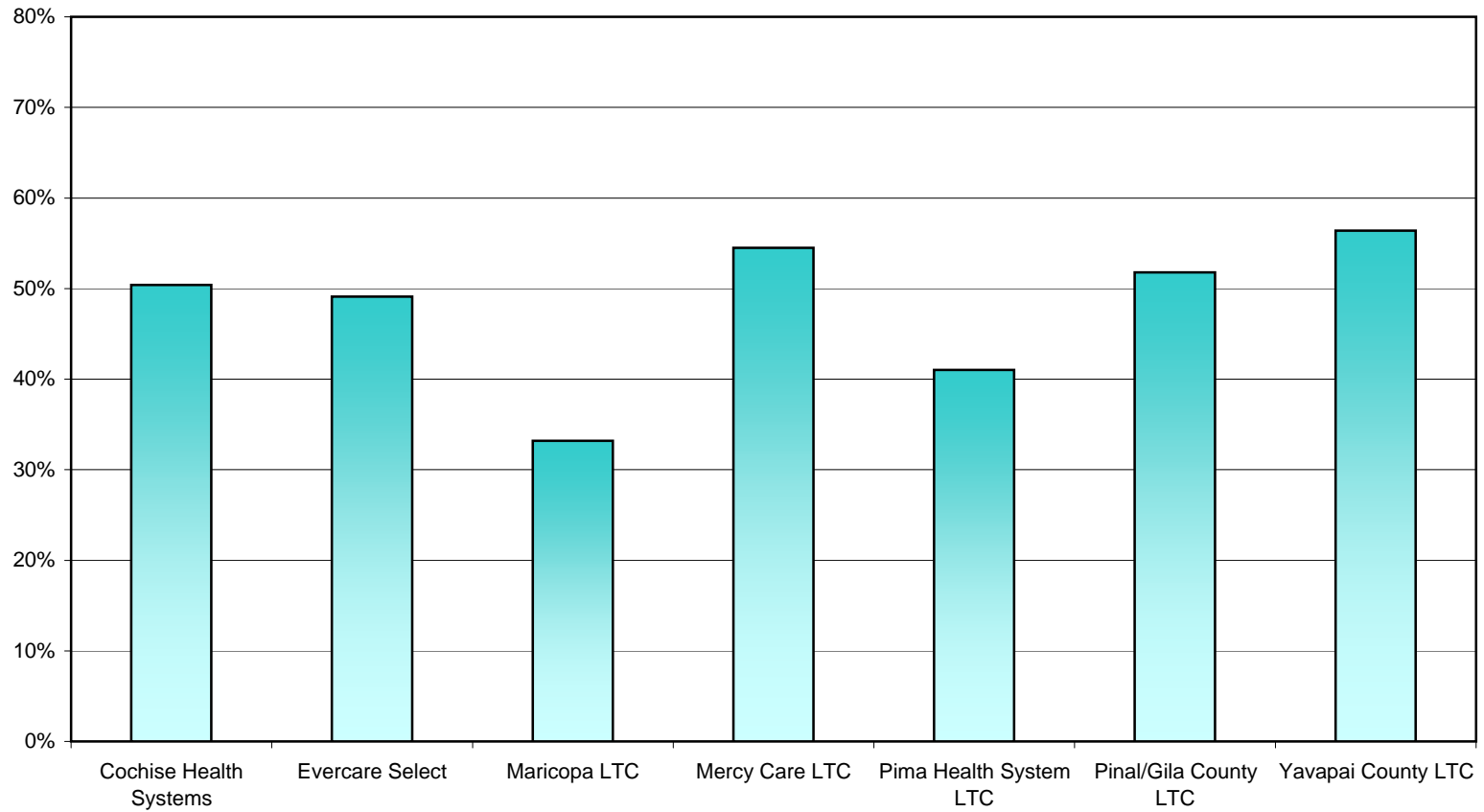
(1) Rates are based on a combination of AHCCCS encounter data and Medicare fee-for-service data.

Table 2
Arizona Health Care Cost Containment System/Arizona Long Term Care System
BIENNIAL LIPID (LDL) SCREENING BY CONTRACTOR (1)
Measurement Period: October 1, 2001, through September 30, 2002

Contractor	Number of Members	Number of Members with LDL Screens	Percent of Members with LDL Screens
Cochise Health Systems	117	59	50.4%
Evercare Select	277	136	49.1%
Maricopa LTC	753	250	33.2%
Mercy Care LTC	393	214	54.5%
Pima Health System LTC	395	162	41.0%
Pinal/Gila County LTC	114	59	51.8%
Yavapai County LTC	78	44	56.4%
TOTAL	2127	924	43.4%

(1) Rates are based on a combination of AHCCCS encounter data and Medicare fee-for-service data obtained from the Centers for Medicare and Medicaid Services.

Figure 2
Arizona Health Care Cost Containment System/Arizona Long Term Care System
BIENNIAL LIPID (LDL) SCREENING BY CONTRACTOR (1)
Measurement Period: October 1, 2001, through September 30, 2002



(1) Rates are based on a combination of AHCCCS encounter data and Medicare fee-for-service data.

APPENDIX

Methodology and Technical Specifications: Diabetes Management Performance Indicator *For the Measurement Period Ending September 30, 2002*

Population

All elderly and physically disabled (E/PD) members in the Arizona Long Term Care System (ALTCS)

Inclusion Criteria

Members ages 18 through 75 years as of September 30, 2002

Enrollment criteria:

- Enrolled as of September 30, 2002
- Continuously enrolled with one ALTCS Contractor with no more than one gap in enrollment, not exceeding 31 days

Diagnosis (identified by pharmacy data, claims or encounters):*

- Pharmacy - National Drug Codes (NDC)
- Claims/Encounter Data - Two face-to-face encounters with different dates of service in an ambulatory setting or non-acute inpatient setting, or one face-to-face encounter in an acute inpatient emergency room setting during the measurement period or the year prior with a diagnosis of diabetes

** Refer to Technical Specifications for more information*

Exclusion Criteria

- Members younger than 18 years of age
- Members older than 75 years of age
- Tribal members
- Members with prior period coverage
- Members not enrolled on the last day of the study period
- Members with a gap in enrollment greater than 31 days
- Members in the fee-for-service program
- Members with the following diagnoses:

Description	ICD-9-CM Codes
Steroid Induced Diabetes	251.8, 962.0
Gestational Diabetes	648.8

Sample Frame

All ALTCS members with a diagnosis of diabetes mellitus who met the denominator inclusion criteria.

Sample Selection

The entire sample frame was included in the study. Random sampling was not utilized.

Sample Frame Stratification

The sample frame was stratified by type of enrollment (i.e., Medicaid, dually enrolled and combined Medicaid and dually enrolled populations). The sample frame was further stratified by ALTCS Contractor.

Data Source

Only administrative (encounter, enrollment, and analytic) data from the Centers for Medicare and Medicaid Services (CMS) and AHCCCS was used to identify the sample frame and indicator inclusion rates for this study.

Data Collection

AHCCCS and Health Services Advisory Group (HSAG) utilized existing encounter, analytic, and enrollment data to identify members who met the eligibility criteria. Encounter data was used to identify diabetic care and visits.

- The AHCCCS Information Services Division extracted existing enrollment data. HSAG then merged AHCCCS enrollment data with CMS enrollment data.
- The Clinical Research and Data unit in the AHCCCS Division of Health Care Management developed parameters for extraction of encounter data to determine diagnosis and compliance with indicators.
- Encounter data was sent to HSAG using a secure file transfer protocol (FTP) line.
- HSAG merged AHCCCS encounter data with CMS analytic data. The merged data was analyzed using a custom Statistical Analysis System (SAS) program to determine denominator inclusion based on Health Plan Employer Data and Information Set (HEDIS[®]) 2002 criteria.
- HSAG analyzed all data to determine if individual indicators were met.

Data Validation

HSAG compared AHCCCS data with CMS data to identify discrepancies between data sets. After combining data sources, the most complete record was used.

Denominators

1. The total number of members who were identified as diabetics
2. The number of members who were identified as dually enrolled diabetics
3. The number of members who were identified as diabetics enrolled only in Medicaid

Numerators

1. The number of members in denominator No. 1 who had a biennial retinal exam
2. The number of members in denominator No. 2 who had a biennial retinal exam
3. The number of members in denominator No. 3 who had a biennial retinal exam
Note: retinal exams were not reported because Medicare data was not available from CMS.
4. The number of members in denominator No. 1 who had an annual Hb A1c blood test
5. The number of members in denominator No. 2 who had an annual Hb A1c blood test
6. The number of members in denominator No. 3 who had an annual Hb A1c blood test

7. The number of members in denominator No. 1 who had a biennial fasting lipid profile
8. The number of members in denominator No. 2 who had a biennial fasting lipid profile
9. The number of members in denominator No. 3 who had a biennial fasting lipid profile

Analysis

- The overall prevalence of ALTCS members diagnosed with type 1 or type 2 diabetes was calculated.
- The numerator was divided into the denominator for each corresponding indicator to determine the indicator rate.
- Data was analyzed as a statewide aggregate for all members in the denominator and by individual Contractor, as well as by Medicaid-only and dually enrolled members.
- Standard deviations and patterns of abnormal distribution of data were utilized to identify any outliers.
- All other stratifications as deemed appropriate (e.g., age or gender) were analyzed.
- Individual Contractor rates were compared to “Healthy People 2010” Goals.

Deviations from HEDIS®

This study was based on HEDIS 2002 specifications for the indicators measured. The HEDIS measure of Comprehensive Diabetes Care includes additional indicators, which were not part of the AHCCCS study:

- Hb A1c poorly controlled (greater than 9.5 percent)
- LDL-C controlled (LDL less than 130 mg/dL)
- Kidney disease (nephropathy) monitored

This study used a combination of AHCCCS encounter data and CMS analytical data to determine denominators, numerators, and indicator rates.

Deviations from Previous Methodology

Previous AHCCCS studies of diabetes care included indicators different from those that comprise the current study. Diabetes care measures for the most recent study, conducted in 2002, included:

- Biannual Hb A1c blood tests
- Annual lipid profiles
- Biannual foot exams

This study included services received through and paid for by Medicare, as well as those paid for through the ALTCS program. This allowed AHCCCS to report indicator rates that more accurately reflect services received by members who are dually enrolled in Medicare and Medicaid. Medicare services included in this study are those provided on a fee-for-service basis, and do not include those provided through Medicare managed care organizations (known as Medicare+Choice plans).

In the previous study, AHCCCS provided a sample of members and data collection tools for each sample member to Contractors. Each Contractor was able to use a combination of medical record and administrative data to identify services provided according to indicator criteria.

Because of these deviations from previous study methodologies, results from the current study will not be comparable to prior years.

Definitions**Statistically Significant:**

A finding is described as statistically significant when it can be demonstrated that the probability of obtaining such a difference by chance only is relatively low. It is customary to describe a finding as statistically significant when the obtained result is among those that, theoretically, would occur no more than 5 out of 100 times ($p \leq .05$) or occur no more than 1 out of 100 times ($p \leq .01$) when the only factors operating are the chance variations that occur whenever random samples are drawn. It is important to note that a finding may be statistically significant but may not be clinically or financially significant.

- Statistically significant values were calculated using the Pearson chi-square test. The parameter used was Degree of Freedom: 1
- Statistically significant levels were set at $p \leq .05$.

TECHNICAL SPECIFICATIONS

Diagnosis

May be identified by pharmacy data, claims or encounters

Pharmacy:

List of National Drug Codes (NDC) available at:

<http://www.ncqa.org/Programs/HEDIS/hedis2002NDClists.htm>

Claims/Encounter Data:

- Two face-to-face encounters with different dates of service in an ambulatory setting or non-acute inpatient setting, or one face-to-face encounter in an acute inpatient emergency room setting during the measurement year or year prior with a diagnosis of diabetes. Diabetes was determined by utilizing the following codes:

Description	ICD-9-CM Codes	UB-92 Revenue Codes	CPT Codes
Diabetes diagnosis	250, 357.2, 362.0, 366.41, 648.0		
Outpatient/non-acute inpatient		49X-53X, 55X-59X, 65X, 66X, 76X, 82X-85X, 88X, 92X, 94X, 96X, 972-979, 982-986, 988	92002-92014, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99271-99275, 99301-99303, 99311-99313, 99321-99323, 99331-99333, 99341-99355, 99381-99387, 99391-99397, 99401-99404, 99411, 99412, 99420-99429, 99499
Acute inpatient/ED		10X-16X, 20X-22X, 45X, 72X, 80X, 981, 987	99221-99223, 99231-99233, 99238-99239, 99251-99255, 99261-99263, 99281-99288, 99291-99292, 99356-99357

HEDIS® 2002 Criteria for Hb A1c

- One (or more) Hb A1c test(s) conducted during the measurement year, denoted by CPT code 83036

HEDIS® 2002 Criteria for Eye Exam

- A retinal exam performed during the measurement year
- A retinal exam performed during the measurement year or year prior to the measurement year and two of the three following conditions were satisfied:
 1. The member was not prescribed or dispensed insulin during the measurement year
 2. The member's most recent Hb A1c level (performed during the measurement year) was less than 8 percent
 3. The member had a retinal examination with no evidence of retinopathy during the year prior to the measurement year (negative diagnosis must be verified by medical record)

Codes to Identify Eye Exams:

CPT Codes	ICD-9-CM Codes
67101, 67105, 67107-67108, 67110, 67112, 67141, 67145, 67208, 67210, 67218, 67227, 67228, 92002, 92004, 92012, 92014, 92018, 92019, 92225, 92226, 92230, 92235, 92240, 92250, 92260, 92287, 99204, 99205, 99214, 99215, 99242-99245	14.1-14.5, 14.9, 95.02-95.04, 95.11, 95.12, 95.16, V80.2

Note: Rates for retinal exams were not reported because data was not available from CMS.

HEDIS® 2002 Criteria LDL-C Screening

- An LDL-C test done during the measurement year or year prior to the measurement year denoted by CPT Codes: 80061, 83715, 83716, or 83721

Exclusions

Description	ICD-9-CM Codes
Steroid Induced Diabetes	251.8 - 962.0
Gestational Diabetes	648.8

Enrollment File

Variable Name	Format	Length	Start Column	End Column
Health Plan ID	Number	6	1	6
Health Plan Name	Text	25	7	31
Last Name	Text	20	32	51
First Name	Text	10	52	62
Middle Initial	Text	1	62	62
AHCCCS ID	Text	9	63	71
SSN	Number	9	72	80
Date of Birth	Date	8	81	77
Date of Death	Date	8	89	96
Sex	Text	1	97	97
Marital Status	Text	1	98	98
Ethnicity	Text	2	99	100
Street 1	Text	25	101	125
Street 2	Text	25	126	150
City	Text	20	151	170
State	Text	2	171	172
Zip Code	Number	9	173	181
Rate Code	Text	4	182	185
Current Placement	Text	1	186	186
Residential Code	Text	1	187	187
Current Location	Text	3	188	190
Enrollment Date	Date	8	191	198
Disenrollment Date	Date	8	199	206
Facility ID	Number	6	207	212
Placement Begin Date	Date	8	213	220
Placement End Date	Date	8	221	228
Eligibility Type	Text	1	229	229
Fiscal County	Number	2	230	231
Residence County	Number	2	232	233
Medicare Part A	Text	1	234	234
Part A Begin Date	Date	8	235	242
Part A End Date	Date	8	243	250
Medicare Part B	Text	1	251	251
Part B Begin Date	Date	8	252	259
Part B End Date	Date	8	260	267

Description of Variables:

Variable Name	Description
Health Plan ID	Six-digit Contractor ID number that indicates with which Contractor The AHCCCS recipient was enrolled
Health Plan Name	Name of Contractor with which the AHCCCS recipient was enrolled
Last Name	Last name of recipient as listed in AHCCCS system
First Name	First name of recipient as listed in AHCCCS system
Middle Initial	Middle initial of recipient as listed in AHCCCS system
AHCCCS ID	Nine-digit alpha numeric number assigned to a recipient upon enrollment in AHCCCS
SSN	Nine digit Social Security number assigned to recipient listed in the AHCCCSS system
Date of Birth	Date of members birth MM/DD/YYYY
Date of Death	The date of death for the AHCCCS recipient (if applicable)
Sex	One character designating gender of the AHCCCS recipient
Marital Status	Marital status of AHCCCS recipient
Ethnicity	Ethnicity of the AHCCCS recipient
Street 1	Street address of the AHCCCS recipient
Street 2	Additional street address of the AHCCCS recipient
City	City where the AHCCCS recipient lives
State	State where the AHCCCS recipient lives
Zip Code	Zip code where the AHCCCS recipient lives
Rate Code	The capitation rate code applied to the AHCCCS recipient
Current Placement	Placement of the AHCCCS recipient
Residential Code	Code designating facility of residence determined by case management
Current Location	Type of location where the AHCCCS recipient receives care
Enrollment Date	Date the recipient was enrolled in the AHCCCS system
Disenrollment Date	Date the recipient was disenrolled from the AHCCCS system
Facility ID	Six-digit code identifying the facility in which the recipient was hospitalized during the period and the two-digit location code of the facility
Placement Begin Date	Indicates the date that the recipient's placement in a facility began
Placement End Date	Date that the recipient's placement in a facility ended

Eligibility Type	The AHCCCS program for which the recipient is eligible
Fiscal County	The county paying for services received by the recipient
Residence County	The county in which the recipient resides
Medicare Part A	Indicates if the recipient is entitled to receive Medicare Part A benefit.
Part A Begin Date	The date the recipient started participating in Medicare Part A
Part A End Date	The date that recipient participation in Medicare Part A ended
Medicare Part B	Indicates if the recipient is eligible to participate in Medicare Part B
Part B Begin Date	The date that the recipient started participating in Medicare Part B
Part B End Date	The date that recipient participation in Medicare Part B ended

Included condition(s)

250....Diabetes Mellitus

- 250.0x....Diabetes Mellitus without mention of complications
- 250.1x....Diabetes with ketoacidosis
- 250.2x....Diabetes with hyperosmolarity
- 250.3x....Diabetes with other coma
- 250.4x....Diabetes with renal manifestations
- 250.5x....Diabetes with ophthalmic manifestations
- 250.6x....Diabetes with neurological manifestations
- 250.7x....Diabetes with peripheral circulatory disorders
- 250.8x....Diabetes with other specified manifestations
- 250.9x....Diabetes with unspecified complications

357....Inflammatory and toxic neuropathy

- 357.2x....Polyneuropathy in diabetes

362....Other retinal disorders

- 362.0x....Diabetic retinopathy

366....Cataract

- 366.41....Diabetic cataract

648....Other current conditions in the mother classifiable elsewhere but complicating pregnancy, childbirth, or the puerperium

- 648.0x....Diabetes Mellitus (classifiable to 250)

UB-92 Revenue Codes

Outpatient/non-acute inpatient:

- 49X.... Ambulatory Surgical Care
- 50X.... Outpatient Services
- 51X.... Clinic

- 52X..... Free-Standing Clinic
- 53X..... Osteopathic Services
- 55X..... Skilled Nursing
- 56X..... Medical Social Services
- 57X..... Home Health – Home Health Aide
- 58X..... Home Health – Other Visits
- 59X..... Home Health – Units of Service
- 65X.... Hospice Service
- 66X..... Respite Care (HHA only)
- 76X..... Treatment/Observation Room
- 82X..... Hemodialysis – Outpatient or Home
- 83X..... Peritoneal Dialysis – Outpatient or Home
- 84X..... Continuous Ambulatory Peritoneal Dialysis (CAPD) - Outpatient or Home
- 85X..... Continuous Cycling Peritoneal Dialysis (CCPD)
- 88X..... Miscellaneous Dialysis
- 92X..... Other Diagnostic Services
- 94X..... Other Therapeutic Services
- 96X..... Professional Fees
- 972..... Professional Fees - Radiology - Diagnosis
- 973..... Professional Fees - Radiology - Therapeutic
- 974..... Professional Fees - Radiology – Nuclear Medicine
- 975..... Professional Fees - Operating Room
- 976..... Professional Fees - Respiratory Therapy
- 977..... Professional Fees - Physical Therapy
- 978..... Professional Fees - Occupational Therapy
- 979..... Professional Fees - Speech Pathology
- 982..... Outpatient Services
- 983..... Clinic
- 984..... Medical Social Services
- 985..... EKG
- 986..... EEG
- 988..... Consultation
- 989..... Professional Fees: Private Duty Nurse

UB-92 Revenue Codes

Outpatient/non-acute inpatient:

- 10X.... All Inclusive Rate
- 11X.... Room & Board – Private (Medical or General)
- 12X.... Room & Board – Semi-Private Two Bed (Medical and General)
- 13X.... Room & Board – Semi-Private—Three & Four Beds
- 14X.... Room & Board – Private (Deluxe)
- 15X.... Room & Board – Ward (Medical or General)
- 16X.... Room & Board - Other
- 20X.... Intensive Care
- 21X.... Coronary Care

- 22X.... Special Charges
- 45X.... Emergency Room
- 72X.... Labor Room/Delivery
- 80X.... Inpatient Renal Dialysis
- 981..... Professional Fees – Emergency Room
- 987..... Professional Fees –Hospital Visit

In conjunction with CPT Codes – HCFA 1500

Outpatient/non-acute inpatient:

- 92002-92014....General Ophthalmological Services (New & Established Patient)
- 99201-99205....New Patient: Office or other outpatient visit
- 99211-99215....Established Patient: Office or other outpatient visit
- 99217-99220....Observation Care Discharge Services and Initial Observation Care (New or Established Patients)
- 99241-99245....Office or Other Outpatient Consultations (New or Established Patients)
- 99271-99275....Confirmatory Consultations (New or Established Patients)
- 99301-99303....Evaluation and Management (New or Established Patients)
- 99311-99313....Subsequent Nursing Facility Care (New or Established Patients)
- 99321-99323....Domiciliary Rest Home or Custodial Care Services (New Patient)
- 99331-99333....Domiciliary Rest Home or Custodial Care Services (Established Patient)
- 99341-99355....Home Services & Prolonged Services (New or Established Patients)
- 99381-99387....Preventive Medicine (New Patient)
- 99391-99397....Preventive Medicine (Established Patient)
- 99401-99404....Preventive Medicine (Individual Counseling)
- 99411.....Preventive Medicine - Group Counseling (30 minutes)
- 99412.....Preventive Medicine - Group Counseling (approx. 60 minutes)
- 99420-99429....Other Preventive Medicine Services
- 99499.....Other Evaluation and Management Services

CPT Codes

Acute inpatient/ED:

- 99221-99223.....Initial Hospital Care (New or Established Patient)
- 99231-99233.....Subsequent Hospital Care
- 99238-99239.....Hospital Discharge Services
- 99251-99255.....Initial Inpatient Consultations (New or Established Patient)
- 99261-99263.....Follow-up Inpatient Consultations (Established Patient)
- 99281-99288.....Emergency Department Services and Physician Direction
- 99291-99292.....Critical Care Services
- 99356-99357.....Prolonged Physician Service – Inpatient Setting*

CPT Code for Hb A1c

- 83036....Hemoglobin; glycated

CPT Codes for identification of Eye Exams:

- 67101....Repair of retinal detachment, one or more sessions; cryotherapy or diathermy, with or without drainage of subretinal fluid.
- 67105....Repair of retinal detachment, one or more sessions; photocoagulation, with or without drainage of subretinal fluid.
- 67107....Repair of retinal detachment; scleral buckling (such as lamellar scleral dissection, imbrication or encircling procedure), with or without implant, with or without cryotherapy, photocoagulation, and drainage of subretinal fluid.
- 67108....Repair of retinal detachment; with vitrectomy, any method, with or without air or gas tamponade, focal endolaser photocoagulation, cryotherapy, and drainage of subretinal fluid, scleral buckling and/or removal of lens by same technique.
- 67110....Repair of retinal detachment; by injection of air or other gas (eg. Pneumatic retinopexy)
- 67112....Repair of retinal detachment; by scleral buckling or vitrectomy, on patient having previous ipsilateral retinal detachment repair(s) using scleral buckling or vitrectomy techniques.
- 67141....Prophylaxis of retinal detachment (eg. retinal break, lattice degeneration) without drainage, one or more sessions; cryotherapy, diathermy.
- 67145....Prophylaxis of retinal detachment (eg. retinal break, lattice degeneration) without drainage, one or more sessions; photocoagulation (laser or xenon arc).
- 67208....Destruction of localized lesion of retina (eg. macular edema, tumors), one or more session; cryotherapy, diathermy.
- 67210....Destruction of localized lesion of retina (eg. macular edema, tumors), one or more sessions; photocoagulation.
- 67218....Destruction of localized lesion of retina (eg. macular edema, tumors), one or more session; radiation by implantation of source (includes removal of source).
- 67227....Destruction of extensive or progressive retinopathy (eg. diabetic retinopathy), one or more sessions; cryotherapy, diathermy.
- 67228....Destruction of extensive or progressive retinopathy (eg. diabetic retinopathy), one or more sessions; photocoagulation (laser or xenon arc).
- 92002....Ophthalmological services: medical examination and evaluation with initiation of

diagnostic and treatment program; intermediate, new patient.

- 92004....Ophthalmological services: medical examination and evaluation with initiation of diagnostic and treatment program; comprehensive, new patient, one or more visits.
- 92012....Ophthalmological services: medical examination and evaluation with initiation or continuation of diagnostic and treatment program; intermediate, established patient.
- 92014....Ophthalmological services: medical examination and evaluation with initiation or continuation of diagnostic and treatment program; comprehensive, established patient, one or more visits.
- 92019....Ophthalmological examination and evaluation, under general anesthesia, with or without manipulation of globe for passive range of motion or other manipulation to facilitate diagnostic examination; limited.
- 99204....Office or other outpatient visit (45 minutes face-to-face with patient and/or family)..
- 92018....Ophthalmological examination and evaluation, under general anesthesia, with or without manipulation of globe for passive range of motion or other manipulation to facilitate diagnostic examination; complete.
- 99205....Office or other outpatient visit (60 minutes face-to-face with patient and/or family).
- 99214....Office or other outpatient visit (25 minutes face-to-face with patient and/or family).
- 99215....Office or other outpatient visit (40 minutes face-to-face with patient and/or family).
- 99242....Office consultation for new or established patient (30 minutes face-to-face with patient and/or family).
- 99243....Office consultation for new or established patient (40 minutes face-to-face with patient and/or family).
- 99244....Office consultation for new or established patient (60 minutes face-to-face with patient and/or family).
- 99245....Office consultation for new or established patient (80 minutes face-to-face with patient and/or family).

ICD-9-CM Codes

- 14.1....Diagnostic procedures on retina, choroids, vitreous and posterior chamber.
- 14.2....Destruction of lesion of retina and choroids.
- 14.3....Repair of retinal tear.
- 14.4....Repair of retinal detachment with scleral buckling and implan.
- 14.5....Other repair of retinal detachment.
- 14.9....Other operations on retina, choroid, and posterior chamber.
- 95.02....Comprehensive eye examination.
- 95.03....Extended ophthalmologic work-up.
- 95.04....Eye examination under anesthesia.
- 95.11....Fundus photography.
- 95.12....Fluorescein angiography or angioscopy of eye.
- 95.16....P₃₂ and other tracer studies of eye.
- V80.2....Other eye conditions

CPT Codes for LDL-C Screening

- 80061....Lipid Panel
- 83715....Lipoprotein, blood; electrophoretic separation and quantitation.
- 83716....Lipoprotein, blood; high resolution fractionation and quantitation of lipoprotein cholesterol (eg, electrophoresis, nuclear magnetic resonance, ultracentrifugation).
- 83721....Lipoprotein, direct measurement; LDL cholesterol.

Excluded Condition (s)

251.8...Steroid induced diabetes

648.....Other current conditions in the mother classifiable elsewhere, but complicating pregnancy, childbirth, or the puerperium

- 648.8x ...Gestational diabetes (classifiable to 790.2)

775....Endocrine and metabolic disturbances specific to the fetus and newborn

- 775.1x....Neonatal Diabetes Mellitus

790....Nonspecific findings on examination of blood

- 790.2....Abnormal glucose tolerance test

790.6...Hyperglycemia NOS

962.0...Adrenal and anabolic congeners